

NWB Annual Report

Year being reported: 2017

License No: 1BR-LOR1727 Issued Date: April 27, 2017
 Expiry Date: April 26, 2027

Project Name: Cape Christian Long Term Monitoring

Licensee: Indigenous and Northern Affairs Canada (INAC) Contaminated Sites

Mailing Address: PO Box 2200
 Iqaluit, NU
 X0A 0H0

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

N/A

General Background Information on the Project (*optional):

The Cape Christian site is situated on a lowland coastal bluff located on the northeast coast of Baffin Island about 16 km northeast of the Hamlet of Clyde River, Nunavut. The site was a former US Coast Guard Long Range Navigation communication station constructed and operated between 1954 and 1974.

The site was abandoned in 1975 without decommissioning. While some remedial works were carried out at the site by different federal and provincial government teams, after it was abandoned, there were still significant environmental concerns at the site, prompting remediation by INAC. The remediation of the site occurred between 2008 and 2011. It involved removal and off-site disposal of hazardous materials, demolition of buildings and structures, excavation of non-hazardous metals and petroleum hydrocarbon contaminated soils, and clean-up of other site debris. All of the non-hazardous wastes were placed in a non-hazardous waste landfill (NHWL) constructed on-site for that purpose.

As per departmental commitments to monitor the NHWL post-closure, a 25-year long term monitoring (LTM) program was initiated at Cape Christian and includes visual inspections, groundwater sampling, soil sampling (as required), and natural environment monitoring. Refer to the *Cape Christian Long Term Monitoring Plan* (2009, 2017) for additional information.

Years 1, 3, and 5 of the LTM program took place in 2011, 2013, and 2015 respectively. Year 7 occurred on August 17, 2017. The attached report *Long Term Monitoring 2017 Cape Christian, Clyde River, Nunavut* (Cape Christian 2017 LTM Report) contains results of the LTM activities conducted in 2017. Future events will occur in 2020, 2025, and 2035.

Licence Requirements: the licensee must provide the following information in accordance with

Part B ▼ Item 1 ▼

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):	Monitoring wells - water samples only	
Water Quantity:	1/day	Quantity Allowable Domestic (cu.m)
	<0.05	Actual Quantity Used Domestic (cu.m)
	0	Quantity Allowable Drilling (cu.m)
	0	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

- ☒ Solid Waste Disposal
☐ Sewage
☐ Drill Waste
☐ Greywater
☐ Hazardous
☐ Other:

Additional Details:

Groundwater was collected from all monitoring wells (MW1-4). A duplicate sample was collected from MW2. The total volume of water used/collected was less than 14 litres. Excess purge water was disposed in the centre of the NHWL.

Monitoring activities were conducted within a single day and was based out of Clyde River, NU so no camp was required. Solid wastes (packaging, paper towels, paper, kimwipes, filters, Teflon tubing) generated (< 0.5 m3) were collected and removed from the site at the completion of monitoring activities.

Additional information is provided in the *Cape Christian Long Term Monitoring Plan* (2009, 2017).

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: None (as reported to the Spill Hot-line)
 Date of Spill: N/A
 Date of Notification to an Inspector: N/A
 Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

N/A

Revisions to the Spill Contingency Plan

N/A - not applicable ▼

Additional Details:

N/A

Revisions to the Abandonment and Restoration Plan

N/A - not applicable ▼

Additional Details:

N/A

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

Year 7 of LTM occurred on August 17, 2017. A visual inspection of the NHWL and surrounding area was conducted in accordance with the Abandoned Military Site Remediation Protocol (AMSRP) and the site-specific LTM Plan. The NHWL was found to be in acceptable condition. Two new settlement features and an area of scattered debris (not associated with the landfill; likely from camping activities) were observed. None of the features noted in the report are considered to affect the physical integrity of the NHWL. However, the grading of the landfill cap is poor and consists of many different particle sizes, which has led to many small undulations on the cap. While most features appear to have decreased over time, one feature (staining and ponded water) appeared to have increased as a result of road construction in the area and the creation of a new drainage channel. Care will be taken to monitor these features during future monitoring events. No significant changes to other features were observed.

A total of 5 groundwater samples were collected (4 samples plus 1 blind duplicate). The samples were not submitted for analyses due to an act of vandalism that took place overnight in Clyde River, where all samples were destroyed. Soil samples were not collected because there was no indication of new seepage or staining. Soil samples were collected from these areas in 2011 and 2013 and no additional sampling was required since they appear to have lessened in severity and extent. Refer to the Cape Christian 2017 LTM Report for additional information.

As per the *Cape Christian Long Term Monitoring Plan* (2009, 2017), future long term monitoring events are scheduled for 2020, 2025, and 2035.

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details attached

Additional Details:

Additional details regarding water sources can be found in the *Cape Christian Long Term Monitoring Plan* (2009, 2017).

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Not Applicable (N/A)

Additional Details:

Remediation was completed in 2011 and the only structure remaining on site is the NHWL. No waste was deposited on site in 2017. Any solid waste generated was removed from site at the completion of monitoring activities.

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board



Additional Details: (date of request, analysis of results, data attached, etc)

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

No additional sampling requested by an Inspector or the Board



Additional Details: (Attached or provided below)

Any responses or follow-up actions on inspection/compliance reports

Inspection Report received by the Licensee (Date):



Additional Details: (Dates of Report, Follow-up by the Licensee)

The last inspection conducted at Cape Christian was in 2009. The 2009 Inspection Report is available on the NWB ftp site. The majority of issues were identified during remediation and no issues remain applicable to post-remediation monitoring activities.

Any additional comments or information for the Board to consider

Physical observations of the NHWL conducted during the 2017 LTM event indicate that the NHWL at Cape Christian is in acceptable condition, is performing as designed, and is containing the enclosed waste.

Date Submitted:

March 28, 2018

Submitted/Prepared by:

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Contact Information:

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GPS Coordinates for water sources utilized

Source Description	Latitude			Longitude		
	Deg °	Min '	Sec "	Deg °	Min '	Sec "
MW-1	70	31	32.19	68	18	19.87
MW-2	70	31	34.97	68	18	11.64
MW-3	70	31	32.53	68	18	7.952
MW-4	70	31	29.87	68	18	12.88

GPS Locations of areas of waste disposal

[illegible]